

REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. The courtesies extended to Applicants' representative during the telephone interview on April 21, 2009 are acknowledged with appreciation. During the interview, the prior art and proposed amendments to the claims were discussed. The Examiner indicated that reciting the housing as being integrally formed would be a new issue.

Claims 1-16, 18-23 and 34-39 are now present in this application. Claims 1 and 18 are independent. Claims 1 and 18 have been amended, claims 17 and 24-33 have been cancelled, and claims 34-39 have been added. Reconsideration of this application, as amended, is respectfully requested.

Specification Amendment

The title has been changed in accordance with the Examiner's suggestion.

Claim Objection

The Examiner objected to claim 30 for a minor informality. By this Amendment, claim 30 has been canceled. Accordingly, reconsideration and withdrawal of this objection are respectfully requested.

Rejection Under 35 U.S.C. § 102 and §103

Claims 1-5, 7, 9-14 and 18-23 and 30-33 stand rejected under 35 U.S.C. § 102(b) as being anticipated by US 6,541,886 (Mayumi). Claims 6 and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mayumi in view of Aoshima et al. Further, claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Mayumi in view of Ueno et al. and claim 15 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Mayumi in view of Atsumi et al. These rejections are respectfully traversed.

Complete discussions of the Examiner's rejections are set forth in the Office Action, and are not being repeated here.

While not conceding the appropriateness of the Examiner's rejections, but merely to advance prosecution of the instant application, Applicants respectfully submit that independent claim 1 has been amended to recite a combination of elements in a stepping motor including a bracket, a housing having a first end coupled to the bracket and a second end having a reduced width compared with the first end, and an integrally formed outer surface extending between the first and second ends, a stator disposed in the housing to form an electric field, a first supporting unit formed on a first end of the bracket, a magnet fixed corresponding to the stator to provide the magnetic field, a second supporting unit supported on the second end of the housing, a rotor supported by the first and second supporting units and a stopper fitted on an opened end of the second end of the housing to support the second supporting unit. The stopper is coupled to the outer surface of the second end of the housing

The Examiner states that Mayumi discloses a housing 28 having a first end and a second end, the first end coupled to a bracket 3. When referring to the second end having a reduced width compared with the first end, the Examiner references the cap member 25. However, the housing 28 has a constant diameter and the cap member does not form part of the housing. This can be seen in Figure 1 where the top right end shows that the outer yoke 13 is between the housing 28 and cap member 25. Claim 1 now recites an integrally formed outer surface extending between the first and second ends of the housing. This one-piece construction facilitates the manufacture and assembly of the stepping motor and is not disclosed or suggested by Mayumi.

Likewise, claim 18 has been amended to recite a combination of elements in a stepping motor including a housing provided with an integrally formed guide portion for guiding a second supporting unit, the guide portion having a smaller diameter than the housing, a stator installed in the housing to form an electric field, a rotor rotatably supported by the second supporting unit and inserted to be spaced away from the stator, a magnet fixed on the rotor to correspond to the stator, a bracket having a third supporting unit in which a first side of the rotor is inserted, contacting an opening portion of the housing and a first supporting unit on which a second side of the rotor is rotatably supported and a stopper coupled to the outer surface of the guide portion to support the second supporting unit.

As mentioned above, the Examiner states that the housing 28 disclosed by Mayumi has a guide portion and a stopper coupled to the outside surface of the guide portion. The claim has been amended to recite that the housing has an integrally formed guide portion, the guide portion having a smaller diameter than the housing. These features clearly distinguish the invention from the prior art. Mayumi discloses a housing having a constant diameter and a cap member having a smaller opening to accommodate a bearing 41. The cap member does not form part of the housing, as it is separated from the housing by the outer yoke 13, and is not integrally formed with the housing, as is now claimed.

Applicants respectfully submit that the combinations of elements as set forth in independent claims 1 and 18 are not disclosed or made obvious by the prior art of record, including Mayumi, for the reasons explained above. Accordingly, reconsideration and withdrawal of these rejections are respectfully requested.

With regard to dependent claims 2-16, 19-23 and 34-39, Applicants submit that claims 2-16 and 19-23 depend, either directly or indirectly, from independent claims 1 or 18 which are allowable for the reasons set forth above, and therefore claims 2-16, 19-23 and 34-39 are allowable based on their dependence from claims 1 or 18. Reconsideration and allowance thereof are respectfully requested.

New Claims

New claims 34-39 have been entered for consideration by the Examiner. Claims 34 and 37 recite that the first end and the second end are formed of the same material whereas the cap member of Mayumi is made of a molded material different than the housing. Claims 35 and 38 recite that the housing and the guide portion have a uniform thickness. In contrast, the housing 28 of Mayumi has a different thickness than the cap member 25. (See Fig 1). Lastly, claim 39 recites that the guide portion is directly contacted with the housing. In Mayumi, the cap member contacts the coil bobbin 18, as disclosed in column 4, lines 40-41.

Consideration and allowance of claims 34-39 are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Chris McDonald, Registration No. 41,533, at (703) 205-8000, in the Washington, D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: April 30, 2009

Respectfully submitted,

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